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Jan 2, 1997

DERWENT-ACC-NO: 1997-054172

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**TITLE:** Fire retardant foam material for coatings, joints etc. - contg. stone-forming forming component and hardener component and=or gas-releasing component and=or pH-adjusting component

**PRIORITY-DATA:** 1996DE-1000977 (January 12, 1996)

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PUB-NO

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MAIN-IPC

 DE 29616052 U1

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**INT-CL (IPC):** C04 B 38/10; C09 K 21/02; E04 B 1/94

ABSTRACTED-PUB-NO: DE 29616052U

**BASIC-ABSTRACT:**

Pasty foam material or a multi-part compsn. of paste components (I) for the prodn. / of inorganic, porous, solid foam prods., contg. a stone-forming component (A) 2 together with hardener component(s) (B) and/or gas-releasing component(s) (C), and/or pH-modifying component(s) (D) and/or a combination thereof, in amts. 4 sufficient to affect pore structure and/or strength. In addn. to the stone-former 5 (A-1), component (A) may contain cpd(s). which release gas at pH 2-14 (A-2) and/or 6 pH-adjusting cpd(s) (A-3). Component (A-1) comprises finely divided amorphous 7 aluminosilicate contg. amorphous SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub>, vitreous amorphous electrostatic 8 filter ash (EFA), EFA from brown coal-fired power stations, ground calcined 9 bauxite, basalt powder, undissolved amorphous SiO<sub>2</sub>, esp. amorphous, opt. anhydrous 10 silicic acid in the form of dispersed powder or fumed silica from high-temp. 11- processes, meta-kaolin, powdered quartz, Mg silicate (talcum, soapstone), mica, 12 perlite, corundum, flue dust, kaolin, zeolite, alumina, nacrite, dickite, garnet, 13 orthoclase, microcline, plagioclase, muscovite, rhylite, Ca silicate, Ca aluminate, 14 Ca ferrite, mixts. of CaO with SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub> and Fe<sub>2</sub>O<sub>3</sub>, cement, Portland cement (PC), 15 iron PC, blast furnace slag cement, trass cement, Portland oil shale cement, blast 16 furnace trass cement, flue dust cement, phonolite cement, vulcanite cement, 17 sulphate slag cement, aluminous cement, expanding cement, deep well cement or fast 18 setting cement. Component (A-2) comprises ammonium chloride, acetate, carbonate, 19 phosphate or sulphate, Na<sub>2</sub>O<sub>2</sub>, H<sub>2</sub>O<sub>2</sub>, Na perborate, carbonate salts, alkali or 20 alkaline earth carbonates, soda, potash, lime, spars, hydrogen carbonates, NaHCO<sub>3</sub>, 21 Al powder or Mg powder. Component (A-3) comprises water glass, aq. alkali silicate 22 solns. contg. 1.2-2.5 moles SiO<sub>2</sub> per mole K<sub>2</sub>O and/or Na<sub>2</sub>O, aq. Al silicate solns. 23 and free-flowing materials contg. 1.5-10 pts. wt. SiO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> mixts. and 0.7-2.5 24 pts. wt. K<sub>2</sub>O or 0.55-1.5 pts. wt. Na<sub>2</sub>O to 1 pt. wt. dissolved SiO<sub>2</sub>, acids such as 25 HCl, H<sub>2</sub>SO<sub>4</sub>, HNO<sub>3</sub> and citric, acetic or phosphoric acid, or alkalis such as NaOH, 26 KOH, Ba(OH)<sub>2</sub> and Ca(OH)<sub>2</sub>. Hardener (B) comprises water or an alkali silicate soln. 27

or free-flowing material as in (A-3). The gas-releasing cpd. in (C) and the pH-adjusting cpd. in (D) are as defined above. Also claimed is a porous, solid inorganic foam prod. (II) from compsn. (I) having a density of 40-1000 kg/m<sup>3</sup>, a relative compressive strength of 0.2-60 N/mm<sup>2</sup> and a mean pore dia. of 0.1-10 mm.

USE - As a fireproof material for filling small holes,joints, defects etc. in walls, roofs and other structural situations, and for coating steel and wooden structures.

ADVANTAGE - A fireproof coating and filling material which is capable of rapid application and adaptation on site without expensive mixers and other equipment, in the absence of electric powder and with minimal waste and defects.

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